

CLAIMS

1. A wind power generating system, comprising:
 - a generator housing mounted on a fixed base so as to be rotatable around a
5 vertical axis;
 - an outer rotor including a hollow cylindrical member supported by the
generator housing so as to be rotatable around a horizontal axis and a plurality of
permanent magnets attached to an inner circumferential surface of the cylindrical
member at a regular angular interval, the cylindrical member including a coaxial
10 extension having a reduced diameter;
 - an inner rotor including a shaft disposed coaxially with the cylindrical member
in a freely rotatable manner, a plurality of core teeth arranged circumferentially along
an outer circumferential surface of the shaft, and a coil wound around each core tooth,
the shaft including a free end that coaxally extends out of the coaxial extension of the
15 cylindrical member;
 - a slip ring arrangement for electrically connecting the coils of the inner rotor to
an external circuit;
 - a first turbine including a plurality of turbine blades mounted to the free end of
the shaft of the inner rotor;
 - 20 a second turbine including a plurality of turbine blades mounted on the coaxial
extension of the cylindrical member, the turbine blades of the second turbine being
provided with a pitch angle that is opposite in sense from those of the first turbine but
otherwise similar in shape as those of the first turbine;
 - wherein the first turbine is axially spaced from the second turbine at least by
25 three times the axial width of the turbine blades.

2. A wind power generating system according to claim 1, wherein the turbine blades of the first and second turbines are each provided with a fixed pitch angle.

5 3. A wind power generating system according to claim 1, wherein the first turbine is axially spaced from the second turbine at least by five times the axial width of the turbine blades.

4. A wind power generating system according to claim 1, wherein the number of
10 the permanent magnets is n times the number of the core teeth, n being an integer equal to two or greater.

5. A wind power generating system according to claim 1, wherein the slip ring arrangement is provided between an end of the shaft of the inner rotor remote from the
15 free end thereof extending out of the cylindrical member of the outer rotor and an opposing part of the generator housing.

6. A wind power generating system according to claim 1, wherein the inner rotor includes three sets of core teeth that are arranged along an axial direction, and the outer
20 rotor includes three sets of permanent magnets arranged along an axial direction so as to correspond with the three sets of core teeth.

7. A wind power generating system according to claim 1, wherein the first turbine is axially spaced from the second turbine at least by 10% of the diameter of the turbines.